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EDITOR AND PROPRIETOR.

Bees and Honey in Ancient Times.

In the books of antiquity, honey is mentioned as one of the most ancient articles of food—man's first source of nourishment. Aye, and are we not informed that when "the morning stars sang together" over the pristine beauty of a new born world, that under the bright smile of Heaven, Adam and his happy spouse were presented with a glorious home in an enchanting garden filled with "supernal fruits and flowers" of Heaven's own planting—nurtured and watched by hosts of angelic attendants, who had made that Eden-home a beautiful Paradise? There "the beasts of the field and fowls of the air" dwelled together in perfect harmony, under sun-lit skies; and among the beautiful bowers of that holy retreat, Eden's feathered songsters rapturously joined in "the swelling chorus."

There, too, reveling in the precious nectar yielded from the bloom of glory-clad hills, shrubs and flowers, was "the little busy bee," with its joyous hum and rapid flight—gathering the plenteous sweetness for the tiny but numerous family about to spring into existence, at its little home! Ever did it flit from leaf to leaf and flower to flower, gathering the honeyed treasures, that its "stores" may be abundant for generations yet unborn—when winter's sable-shades might settle down upon the earth, visiting it with cold and storm, chilling the "little pets" by its frozen breath or fiercer blast!

No historian has transmitted to our day a description of the rude hive provided for the bees that Noah carried into the ark, nor are we informed

whether Abraham's bees were kept in log-gums or box-hives, but it is recorded that the land where Abraham dwelled—Canaan—was one "flowing with milk and honey;" and when the old Patriarch, because of the famine that prevailed there, sent his sons to Egypt to buy corn, he sent as a present to the Egyptian ruler some of Canaan's famous honey. We may well conclude that Canaan's honey was then as famous as in subsequent ages was the honey from Mount Hymettus in Greece.

In later years, Abraham's offspring journeyed through the deserts of Arabia, and in order to sustain them there, God gave them manna from Heaven, to eat; they said that "the taste of it was like wafers made with honey." When the Amorites came out of the mountains of Sier against the children of Israel, "they chased them like angry bees." In the Mosaic law we find many statutes regulating the ownership of bees. When Jonathan was engaged in battle with the Philistines and became tired and faint, he partook of honey, and was greatly refreshed. David and his army was provisioned in Gilead, and honey was one of the luxuries enumerated. The Jews placed honey before their guests as a sign of welcome, giving them the greatest luxuries that the land produced. Jeroboam sent his queen with presents to the Prophet Ahijah, and included honey. In the tythes of the Jewish Priesthood, honey is enumerated. Job signified the plenteousness of honey in the land, by speaking of "brooks of honey." Solomon, relished Canaan's delicious honey, and volunteered this advice: "My son eat thou honey; because it is good." Isaiah mentions "the bee that is in the land of Assyria," and declares that bees were so plenty that "butter and honey shall every one eat that is left in the land."

The earliest mention of honey as an article of commerce, is, that the Jews

were engaged in trading it at Tyre, that old and honored mart of trade in Phœnicia. Sirach, who lived about the time of the re-building of the Temple of Jerusalem, speaking of the necessities of life, mentions honey, with flour and milk. Solon, in the year 600, B. C., enacted a law, requiring that bee hives in cultivated fields, must be 300 feet apart. Homer, Herodotus, Aristotle, Cato, Varro, Virgil, Pliny, Columella, and other ancient sages, composed poems, extolling the activity, skill and economy of bees. The celebrated Cilician apiarist Aristomachus, of Solus, with 58 years of experience in bee-keeping, wrote on the subject of bees and honey, some 500 years, B. C.—but that work is lost to us. The Persians, Grecians and Romans, used honey quite extensively as an article of diet; they also used it largely in preparing their food, and by it, most of their beverages were sweetened.

More than 3,000 years ago, it is said that Samson proposed this riddle to the Philistines: "Out of the eater came forth meat; and out of the strong came forth sweetness," and gave them seven days to expound it. They are said to have been unable to explain it, and by threats of burning his wife and all her kindred, they extorted the explanation from her, as follows: "What is sweeter than honey? And what is stronger than a lion?"

Samson was not only a riddle-maker, but was himself a riddle! It is said that while he was quietly walking, unarmed, in the vineyards at Timnath, "a young lion roared against him," and "he rent him, as he would have rent a kid." "After a while, he turned aside to see the carcass of the lion, and, behold, there was a swarm of bees and honey in the carcass of the lion." Thereupon we are told that he commenced to regale himself on the honey, and gave of it to "his father and mother, and they did eat." This was the key to his riddle.

Of course it was very singular that he should have slain a lion in the prime of his vigor, and yet more strange that a swarm of bees should have taken possession of the carcass.

This remarkable story of ancient times is full of enigmas. In explanation of some of these, Oedman remarks as follows:

"The lion which he slew had been dead some little time before the bees took up their abode in the carcass, for it is expressly stated that 'after a time' he returned and saw the bees and the honey in the lion's carcass; so that if any one here represents to himself a corrupt and putrid carcass, the occurrence ceases to have any true similitude, for it is well known that in those countries, at certain seasons of the year, the heat will, in the course of 24 hours, so completely dry up the moisture of the dead camels, that without undergoing decomposition, their bodies will long remain like mummies, unaltered, and entirely free from offensive odor."

In that country, it is said, that with wild beasts, birds and insects, coupled with the dry heat, a dead body is soon cleansed from all corruption, and the bones are clean and white, and a swarm of bees may readily have used such a carcass for a hive. We do not propose to attempt to clear the story of all difficulties, but will draw some lessons from Samson's very singular adventure.

In those days, among the Hebrews, Romans, and Greeks, honey appears to have been about the only sweet, and was used in place of sugar, then unknown. Honey was then considered among the necessities of life. It is true that Pliny, Galen, and some other authors allude to *saccanon* as a white crystallized gum obtained from an Indian reed, which was sometimes used as a medicine, and was "brought from Rome, in pieces about the size of a nut." The Arabians were first to bring sugar to notice, after they had pushed their victorious arms into the Western regions.

The first writers by whom sugar, as such, is mentioned, says an author, lived in the 12th century, in the time of the crusades. Albert of Aix states that the soldiery, when near Tripoli, in Syria, pulled up the sweet stalks of a reed grown there abundantly in the fields, and called *zucra*. Its wholesome juice refreshed them, and was so grateful to their taste that they were incessantly sucking it. This valuable plant was diligently cultivated every year. When ripe for harvest, the natives crushed the reeds in a mortar, pressed out the juice,

and preserved it in vessels till it became thick and granulated, and resembled snow or salt in its whiteness.

In the year 1306, when *Sanudo* compiled his *Mysteries of the Crusaders*, the sugar cane was not yet cultivated in Sicily, though it was then already grown extensively in the Morea, in Cyprus, and Rhodes. A century later it had become so common in the island of Sicily, that the infant Don Henry, of Portugal, readily obtained there a supply of plants for its introduction in Madeira. From here and from the Canaries it was carried to America, where it has been so extensively cultivated that the European plantations were speedily abandoned, and America now supplies with sugar not only nearly all Europe, but a large portion of Asia also. The sugar cane was first brought to the Western Hemisphere by the Spaniards.

Another writer remarks as follows on the consumption of honey:

The consumption of honey and wax, and consequently the demand for them, was so great among the Romans, that the production thereof was an object of the highest importance in rural economy; and no one was deemed qualified to manage a farm who did not thoroughly understand bee-culture as then practised. This was to be made an essential source of revenue to the proprietor, for the Romans were a practical people, who, according to Columella, looked to an increase of annual income in their pursuits more than to a mere gratification of taste. But the natural supply of honey in Italy was insufficient for the home demand, and large quantities were imported from Africa, Crete and Sicily, the superior quality of which induced the Italian beekeepers to send the finest and most aromatic of their own to market under the name of Sicilian and Cretan honey, as we are informed by Varro. That of inferior quality, as we learn from Pliny, they were in the habit of coloring and sweetening by an admixture of other substances, and strengthening by the addition of various kinds of wine. An annual tribute of honey and wax was imposed on conquered provinces and territory, as on Pontus and Corsica, and the hope of obtaining additional supplies, it is supposed, was among the inducements for their invasions of Germany.

A large amount of honey was required by the religious ceremonies and worship of the people. "Nothing is sweeter than honey," says Varro, "grateful to Gods and men. It is used on the altars." It was particularly prominent among the sacrifices of the peasantry. The numerous rural deities, whose favor and protection they invoked, and to whose service they were attached, claimed a portion not only of the products of their gardens, orchards and fields, but of their flocks and herds, and of their apiaries. Also at the feasts of the Gods, described by Ovid, which required costly aliments and precious wines, the delicious honey-cake was

never wanting. These were composed of meal, honey and oil, and had to be equal in number to the years attained by the offerer. For the domestic worship also of their household deities—the *Penates*—honey "the gift of the Gods," was indispensable; and it constituted a large item at the vernal consecration—*ambarvalia*—of their fields in April, as well as at the annual thanksgiving in October, and likewise at the special worship of Ceres in November, who was regarded as the "flock increaser," and the "honey dispenser," and who, by her union with the rain-god Zeus, caused fruitful seasons. Her priestesses were called "bees," because honey was the first food of the infant Dionysus, the son of Bacchus, whom Ceres bore in her arms, as Isis carried Horus; and she was the instructor of Aristæus in bee-culture. Bacchus, too, demanded a share, as the "discoverer of honey," the "admirer of all sweetness," and the "decorator of the blooming meadows."

Every sacrificial victim offered to the higher Gods was sprinkled with milk, wine and honey, and large quantities of the latter were required in the solemn celebration of their mysteries, and in the obsequies of the dead. The later Romans poured honey in the grave of the deceased. It was with them a symbol of death. It will hence readily be inferred that their religious ceremonies involved a large consumption of honey, and that this must have induced increased attention to bee-culture. But the quantity used in domestic economy was still greater, as they were unacquainted with the sugar now in common use. What they called *saccharum* was a very different article, obtained from Arabia and India. It was, as we learn from Pliny, used only medicinally. Honey was thus the only sweetening employed by them for meat and drink, and was as indispensable in their households as sugar is now in our families.

In view of the death-dealing adulteration of sweets in our day, is it not our duty to imitate Samson, who, when he had found the God-given pure sweet—honey—sought out his relatives and took some of it to them to eat?

Thousands and tens of thousands of children are dying all around us, who, because their ever-developing nature demands sweetness, crave and eagerly demolish the adulterated "candies" and "syrups" of modern times. If these could be fed on honey, instead, they would develop and grow up into healthy men and women.

Children would rather eat bread and honey than bread and butter; one pound of honey will reach as far as two pounds of butter, and has, besides, the advantage that it is far more healthy and pleasant-tasted, and always remains good, while butter soon becomes rancid, and often produces

cramp in the stomach, eructations, sourness, vomiting and diarrhoea. Pure honey should always be freely used in every family. Honey eaten upon wheat bread is very beneficial to health.

The use of honey instead of sugar for almost every kind of cooking, is as pleasant for the palate as it is healthy for the stomach. In preparing blackberry, raspberry or strawberry short-cake, it is infinitely superior.

It is a common expression that honey is a luxury, having nothing to do with the life-giving principle. This is an error—honey is food in one of its most concentrated forms. True, it does not add so much to the growth of muscle as does beef-steak, but it does impart other properties, no less necessary to health and vigorous physical and intellectual action! It gives warmth to the system, arouses nervous energy, and gives vigor to all the vital functions. To the laborer, it gives strength—to the business man, mental force. Its effects are not like ordinary stimulants, such as spirits, etc., but it produces a healthy action, the results of which are pleasing and permanent—a sweet disposition and a bright intellect.

How astonishingly appropriate is even its name—honey! Derived from the Hebrew word *ghoney*, literally it means DELIGHT. Humanity may, therefore, delight itself with honey, as long as the sun endureth!

To Our Exchanges.—We have prepared the first article in this paper with especial reference to its adaptability for general reading, and respectfully invite the editors of our Exchanges and others to copy it into their papers. It contains information of value to the general public, and should be read by every one interested in providing a pure sweet for the young, middle-aged and old,—both food and medicine. Bee-keepers who desire to increase honey consumption, should send to us for an extra copy, and personally take it to the editors of the local papers of the county, and ask them to copy it. We print a large edition this week, and will supply it free for this purpose, while any are left.

By the *Review*, Butler, Ind., we learn that Mr. L. J. Diehl has lost only 4 colonies out of 160, during the past winter. Generally the losses have been very light, and the prospect for a good honey crop is excellent.

The Partridge Pea.—Prof. A. J. Cook, in the *Rural New Yorker*, gives the following concerning this honey plant:

Among the many plants which I receive each year from the bee-keepers throughout the United States, as furnishing abundant nectar for the bees, no one comes more frequently, or from a wider range of territory, than the partridge pea—*cassia chamaecrista*. Like the clovers, this is a leguminous plant, and like its near relative, the cow pea, it not only furnishes nectar from the flowers, but even more abundantly from extrafloral glands situated on the peduncles. Gray speaks of this as more abundant southwards; but I have received it very frequently from Iowa, Northern Illinois and Wisconsin. The flower is bright yellow, and the habit of the whole plant is quite attractive. The Pulse family is very rich in bee-plants, as will be seen by the following list: White and alsike clover, melilot, or sweet clover, locust, wistaria, Judas tree, honey locust, and the cow and partridge peas. We thus see that the Pulse family, like the Mint and Composite families, are of great importance to the apiarist.

Queen Rearing.—Mrs. L. Harrison, in the *Prairie Farmer*, gives her views on her *modus operandi* of queen-rearing, thus:

We like all kinds of bees, yet Italians have our preference; they are proof against moths, cling to the combs better, and are more enterprising than the common bees of the country. Italians are so common that we doubt if there are many pure German bees now in this country.

Persons who have kept bees for any length of time have noticed that some colonies, whose conditions are the same as the remainder of the apiary, produce more honey than others. These colonies are the ones to breed from, if honey is the object in view. If a colony is deprived of its queen, in six hours the bees will be constructing cells to raise another. Worker eggs, or larvæ not over three days old, are used for rearing queens. Some breeders claim that the best results follow when the bees have access to eggs only. Bees seem to prefer to raise queens on new white combs; such an one should be given to the breeding colony, and placed in the centre of the hive; holes might be cut in it, making convenient edges for the bees to attach their queen-cells, so that they can be easily removed, if desirable to do so. On the third day this comb should be given to queenless bees, and they will immediately commence enlarging cells. On the twelfth day, if it is desirable to preserve the queens, all cells should be removed but one, as the first one that emerges will destroy all rivals. Those who make a specialty of rearing queens, remove the frame to an incubator and examine it, often removing the queens to a nucleus, as fast as hatched. Those who have not a con-

venience of this kind, can cut out the cells, and give them to nuclei, previously formed long enough to have cells of their own. We have had many cells destroyed by giving them to newly formed nuclei, but never lose them if they have cells of their own. To save the time of inserting cells, we often wait until the bees have eaten off the outside covering, showing that the queen will soon be out, and then remove the cell with adhering comb, so that it will fit between the frames of honey, placing point downwards, and in a short time the queen is out. We preserve cells with variations; sometimes we place them over cages, similar to a cover of a tin pepper-box, only the tops are of wire cloth; and again cut out cells and put them into cages (made of wire cloth by rolling around the broom handle, with stoppers in each end), and place them in the cluster. If young queens are introduced, when they are only a few years old, they are generally well received.

System in the Apiary.—Mr. A. E. Foster, in the *Practical Farmer*, gives this very timely advice on systematic work in the apiary:

"A place for everything, and everything in its place." I know of no place (unless it is in the family) where this rule should be followed more closely than in the apiary. The prosperous bee-keeper is always in a hurry, needing different supplies as he examines different hives, and it is very necessary that he should know just where to find things as he needs them. If you have not this faculty well developed, cultivate it, by assigning everything in your apiary a place, and keep everything in its place. The time lost in hunting here, there and everywhere, for what you need, will amount to a great deal, more than any one would suppose; and it will not only save time, but keep you from getting in a bad humor, which generally follows one of those long searches. The mother who teaches her child to put things where it gets them, does the child good, and saves herself much trouble, in picking things up after it.

Mr. O. O. Poppleton has returned from Florida, where he has spent the winter, accompanied by his wife. They have had an excellent time, and look well. They brought us a sample of mangrove honey from the apiary of Mr. W. S. Hart, of New Smyrna, Florida. In the article, on page 213, entitled Bee-Keeping in Florida, Mr. P. points out two errors, which we correct with pleasure. They were, doubtless, inadvertently made by Mr. Lake in copying. The "bee belt" is 25 miles (not 125); and the red mangrove grows below the head of Indian river—not "above," as it is there stated.

CORRESPONDENCE

For the American Bee Journal.

The Best Bees—How Obtained.

JAMES HEDDON.

The following was received April 18, and I asked Mr. Hutchinson if I might insert it, at the head of my reply as an excuse for again coming forward with what, to me, is not the most pleasant of subjects to discuss at the present time.

MR. HEDDON.—When you have the time, please give us one more article on "The best bees—how they were obtained." Please tell us if the bees that you now have are any better than those you had when you first made the cross between the dark Italian and brown German, if so, in what respect, and what methods and selections were employed to bring about the desired results. What I wish to know is, if I would obtain as good results at once, by crossing the two above mentioned varieties, as I would to obtain some of your bees; that is, can I gain five years by commencing where you are now? Some bee-keepers have remarked, in my presence, that "Heddon's bees were nothing but hybrids; anybody can get hybrids easily enough, without obtaining his hybrid queens." Now, what I wish to know is, if your hybrids are superior to the hybrids that would naturally result, at once, from a cross between the dark Italian and the brown German varieties, or whether, by selection and care, you have developed a superior strain of hybrids; that is, superior to what would result naturally at once from a cross between the above mentioned varieties. In a year or two more, if I get well started in the production of comb honey, I shall cut loose from this band-business. I shall make the production of comb honey my speciality, then if any wish to obtain my queens they can take such queens as I know to be best, or they can let them alone. Now, it is my honest opinion that the kind of bees that you have, are the best for the production of comb honey, and I wish to know which is the simplest, easiest, quickest and best way to stock my apiary with such bees, and I feel certain that you will let neither modesty nor self-interest influence you in giving me advice upon the subject.

W. Z. HUTCHINSON.

Rogersville, Mich., April 16, 1883.

I started into this business with the purchase of 48 colonies of black or German bees, all in box hives except eight, which were in old-fashioned Langstroth hives. They were purchased of farmers about this vicinity, not buying more than six of any one person; generally gotten in lots of 1, 2 and 3. Six colonies were bought of one Mr. Southerland. Let us call these the S. bees. Not knowing enough about the business at that

time to keep busy all the time with this apiary, and bees being a new and mysterious thing to me, I spent many hours sitting close to the hives and watching the little sharp and industrious individuals come and go, and guard the entrance. I was not long in discovering that different colonies possessed remarkably different characteristics and looks. Right away I became attached to the S. bees, and the superiorities that these colonies plainly manifested, were very well marked in each and every colony. With these superior traits, was a marked physical difference; these bees were all larger and lighter in color than any of the other 42 colonies. Five colonies purchased of Mr. H— were the meanest and most worthless colonies in the apiary. Every colony was vicious, and seemed to spend most of their time "seeking whom they might devour." They never looked into the surplus boxes that season. The season was the worst in my experience. But little honey was gathered, and the 6 S. colonies (all in box hives) had more than all the rest added together. The 5 H. colonies were the smallest and blackest bees in the yard. Ever since I have noticed that traits and marking like the above, keep company with each other wherever I have seen German bees.

A few seasons later I got bright three-banded Italians of several prominent breeders. These Italians possessed some points of merit over my brown S. strains, but on the whole, they were not their equal for the apicultural pursuit of dollars and cents. Crosses between the two races were a cross "cross." I wished I had never seen them. I wrote against the Italian bee, and the trade in them. The "hybrids" were pretty good workers, better than the pure Italians, but too irascible for comfort. While I was freely exclaiming my disgust for these Italians, Mr. Oatman, of Dundee, said to me: "If you will just try some of my stock, which is of the dark leather-colored Dadant importation, you will become a convert to the Italian bee, I feel sure."

Always open to conviction, I tried once more, and sure enough, I did find these bees vastly superior to the bright, shorter bodied Italians. At the time of their advent into my apiary, I had bred my colonies, nearly all, to these brown Germans, and, as I suppose all do, who breed bees, had selected colonies of the best qualities to breed from. This was forced upon me, as I was somewhat mixed up with some of the inferior blood. Not much so, however, as severe winter losses had assisted me to rapidly get rid of this blood. As good as these dark Italian bees were, the brown bees still possessed some marked traits of superiority over them. Of course, crossing between these races took place at once, and I soon had the happy privilege of observing bees that possessed more valuable characteristics, valuable to him who wants profit from the business than either one of the races in their purity.

A curious fact here presented itself. None of the crosses (or hybrids) be-

tween the brown German and dark Italian bees were bad in temper. Both of their parent strains were the mildest of their races, and the crosses are just as amiable as any bees I ever handled.

That was about six or seven years ago, and since that time I have, in as great a measure as practical, directed the breeding and crossings, and without knowing the reason why, colony No. 36 gathered more than No. 29, and believing that whatever the reason might be, the law of hereditary claimed it for its own. I have bred from the colonies that gave me the most surplus honey, and were the best behaved toward their operations and each other. These two, have I made the vital points. I soon learned that I need not care for the number of rings. Two years ago I sold to Mr. Shirley my Glenwood apiary. At that time the bees were of my mixed races, as mentioned above. Mr. Shirley is an energetic and skilled apiarist, and a master at breeding, but he has a fancy favoring the rings, and he has, in breeding, added to my list of good-nature and honey gathering qualities, the other point of three bands, and he works with my bees here some every season, and I cannot but believe that he will agree with me that he cannot see that his bees are any better, in any respect, than my hybrids, as Mr. H.'s acquaintances are wont to call them. They are hybrids, but I avoid the use of that word, for it has been made to sound ugly, because of the old irascible crosses that went by that name. I think that Mr. Hutchinson has made a wise determination, and one that he will not regret. I am satisfied that, with good bees, proper fixtures, and the clear calculation of Mr. H., the production of comb honey has far more profit with it than any queen business.

This is not all. I find that the time has come when large numbers of beekeepers are looking at the matter as does Mr. H. and myself, and I predict that, within two years, four-fifths of the bees sold in this country, will be ordered for their merits, and not for any special number of bands.

I have frankly told you of my experience in the matter, and once more given my deductions, drawn from that experience, and I leave Mr. Hutchinson to answer the rest of his questions from the reasonings of his own brain.

Dowagiac, Mich.

For the American Bee Journal.

Old Foggy's Plan of Bee-Culture.

FRANK. B. RIFE.

The terrors of winter has passed, which has kept our little workers confined for so long; spring has opened again, and the busy hum of their wings is heard from morning till night, gathering the nectar from the wild flowers.

I wintered my bees on the summer stands, with excellent results. I put 13 on a long bench in November, and boarded up the west side, so as to be

It seems, when one is away off, out of the pale of civilization, folks do not always get the stories they hear about him straight, and, I am sorry to say, it looks as though some do not quite want everything to be known just as it is. The item about me on the first page of the BEE JOURNAL for Oct. 18, 1882, which, though true, and evidently published in good faith by the editor, was very liable to create an incorrect impression among bee-keepers. As therein stated, I was quite

sick during last summer; indeed, at three different times during the year, my life was dispaired of, and, of course, I did not rear as many queens as I had hoped to be able to. But I think the season's showing is fair, considering the peculiar difficulties under which one must labor in cultivating bees in the Orient; and the fact that the "Mt. Lebanon Apiary" had to be wholly created after I came to Beyrout, at the beginning of last year, which latter fact should be noticed, since parties in America stated in 1881, that the apiary had already been established at Mt. Lebanon. It was during my first illness in 1882, that Mr. T. B. Blow, of Welwyn, England, called on me in Beyrout, having previously visited me in Cyprus, where I left him when I came to Beyrout to start the apiary there. He, alone, is capable of understanding the numerous difficulties with which I had to cope at that time. As soon as possible earthen pots and cylinders containing bees, were purchased to start up the new apiary, and the work of transferring colonies, rearing and shipping queens began. It was at this time that the weather was unfavorable, cold rains, then later warm rains, with bright warm sunshine between the driving showers. In June I was very sick with cholera morbus again. In July came the sad loss of our only little one. Following this was a serious attack, resulting, the physician said, from too great exposure to the fierce tropical heat of the sun in Cyprus in preceding years.

We had been obliged to "flee the mountain" on account of the condition of my health, and the Moslem outbreak in Beyrout (which, in the BEE JOURNAL of Aug 16, 1882, was wrongly located in Cyprus). The cool air of the upper Lebanon did me good, and as soon as it was safe I returned to my work. Notwithstanding these interruptions, I was able to send out, during the season of 1882, queens to the number of 340, and 3 full colonies (a small amount of honey and wax were also sold). Of these, 179 were addressed, by express, directly to Mr. D. A. Jones, of Canada, while a number of the rest were sent by mail to parties in England, who, it was expected, would forward a portion of them to Mr. Jones. From the latter I never received any definite statement as to how many of these queens were safely received, but only the assertion that many failed to get through. The cause of poor success in shipping those sent by express, was greatly owing, I believe, to the method of shipping prescribed by the gentleman just mentioned. The only shipments to America made during the past three years, that have been eminently successful, were two lots (one of 30 queens in 1881, and one of 42 queens in 1882), put up in accordance with the plan I proposed upon first landing in Cyprus in 1880. I have met with fair success, sending queens from Cyprus and Syria by mail to different parts of Europe, except when, this last year, some 40 fine Syrian and Palestine queens were seized in London, and sent to Paris (having been

mailed at a French post-office in Syria), after which I got them back at the end of about six weeks, all dead!

I sent the first queens by mail from Cyprus to Europe in June, 1880, as can be seen by reference to the *British Bee Journal* for July, 1880, where the method employed is described and the cage illustrated. With this form of cage as a basis, changing from time to time conditions of putting up to, suit the season of year, and as further experience suggested, I think I have, with the help of one modification suggested by a friend in England succeeded in finding out how to be successful in sending queens from the East to distant lands. It must be borne in mind that it is a journey of 3,000 miles, 1,500 of it by sea, in a sub-tropical climate, where hot desert winds are particularly trying for the bees, which are buried in the ship's hold, under tons of other mail matter.

During the coming season I shall try to send some queens by mail from Europe to America. I believe I would have succeeded in doing this, last year, had not the 40 queens been seized in England; for some of these packets were experimental ones addressed to Mr. D. A. Jones. Some of the English postal regulations are very troublesome, and, among these, is that which excludes queen-bees from the mails. The bee-keepers of England ought to protest *en masse*, and keep protesting until permission is granted to send queens by mail. This is surely one reason that has tended to make the introduction of Italian and other improved bees very slow in England. Our British cousins, so progressive in many other respects, have not even a packet post, without which we would hardly think we could get along.

Athens, Greece, March 30, 1883.

Written for the Kansas State Board of Agriculture

Bee-Keeping—Past and Present.

HIRAM J. WARD.

The subject of bee-keeping has claimed the attention of many of our most learned men of ancient and of modern times, who look upon it as a science worthy of their study and their philosophy, finding in the honey bee an insect worthy of better care and attention than it formerly received. Gratwell, Schirach, and Huber the elder, were among those of antiquity who devoted their time and wisdom to the advancement of the knowledge of the habits and character of these insects; and to the latter, especially, we are indebted for much that is of estimable value in the studies of the naturalist. Although he became blind at the early age of 15, his works gave an impulse to this branch of rural industry in Europe, which caused the management of bees in common hives to be brought to a high degree of perfection; his experiments being conducted by his affectionate wife, and going so far as to count a full colony one at a time. Debauvoy, in the forefront of this cen-

tury, invented his movable-frame hive, but it was found to be inconvenient for general use, and it has been improved and improved, until we now have hives to suit all men.

At the present day the bee-keeping world are agitating the production of the *Apis-Americana*, or the "coming bee," that it is hoped will be able to reach the nectar in our deepest flowers—such as red clover, thistles, etc., and will produce one, two or three hundred pounds of honey per colony. The idea of stripes or color has passed away with specialists, and now they breed for business. Occasionally one, who still sticks to the common black bee, warmly defending their excellences. While we all have to agree that they produce the whitest of comb honey, I think I can safely say that nine-tenths of the bee-keepers of to-day would prefer the Italians, for they possess more excellences than any other strain that has been introduced yet; being more docile than the blacks, also much larger, and can carry heavier loads against our strong winds, and breed faster—keeping their hives full of workers. My advice to all bee-keepers would be to Italianize all of the bees in their neighborhood, and then they can be sure of keeping their bees pure. But if they allow any black colonies to be kept within two or three miles of them, they will have to be very watchful if they get any purely-mated queens, because the queen goes out in the air to mate, and the black drones being smaller and swifter, outstrip the heavy Italian; and the consequence is, you have a queen producing hybrid bees. This can be prevented by any judicious apiarist, to a large extent, by rearing drones from the best Italian colonies, cutting all drone comb out of the black colonies, and not allowing them to rear any drones.

The hybrid bees has admirers, too, for they produce beautiful comb honey, and are very industrious; very often storing more than either the blacks or pure Italians; but they are more irascible than the pure of blacks or Italians, often being very annoying to everybody and everything that moves. But anyone can put up with considerable trouble to be rewarded with a lot of choice honey, for they are indefatigable workers. They, too, are larger than the blacks, although they do not all have stripes. Some of them are pure black, while others have stripes across their abdomen; and, in fact, are pure Italians. Yet queens reared from these will have hybrid drones—the drones being what the mother is; if she is pure Italian, her drones will be pure Italian; if she is black, the drones will be blacks; or hybrid, the drones will be hybrids.

While many of our best apiarists advocate breeding from the swarms that store the most honey, irrespective of the color of the queen or drones, others recommend selecting a pure colony to rear queens from, and select their best working colony to rear drones from. I have never reared queens only for my own use, and I have always selected good, large bees,

and as near pure as possible, to breed queens from; taking my second best for drones, and preventing any others from rearing drones by removing all drone combs, or cutting the drones' heads off, just before they are ready to hatch; and I have a strain of bees now that winter well, and store as large an average as any in this country. My average for 1882, was 82 pounds per colony, the yard through, although my best went 120 to 140 per hive. One-third of my surplus was in small sections, weighing from 1 to 1½ and 2 pounds each. Honey put up in such packages sells readily, when compared with the surplus boxes that were formerly used.

A word to those who are thinking of investing in bees will be in order now; and it will be the old adage used so often: "Make haste slowly." By this I mean, do not invest in more than two or three colonies at first, for they will multiply faster than you will learn to handle them; and if not properly cared for, your profits will come out on the debtor side. Beginners must have a little adaptation to their work, or they will fail to reach the financial goal; for bee-keeping now, and in the future, is not as it was when "father kept bees." It has been reduced to a science, and will be more scientific in time to come; only those that keep pace with the improvement, and have a liking for the business, will be successful—and bee-keeping is becoming a specialty with hundreds of scientific bee-keepers. It should be a separate occupation, for the simple reason that any one posted in the improvements up to the present, can produce honey cheaper than those who have only a colony or two out back of the smoke-house, which are looked after only in swarming-time, or time to rob, by killing them. Let the same person just raise one more hog, and when fattened and sold, it will buy more honey from any practical apiarist than he would get from his two or three colonies, with less trouble or money invested. Indifferent or careless bee-keepers allow the bee-moth to accumulate, and by so doing, make it more labor for the successful bee-keeper to rear good business bees, upon which he depends for the bread and butter for his family and himself.

Again, where a man has a love for the business of handling bees, it is a very remunerative employment, and will give him valuable lessons of his duty toward his fellow-man; also teaching him that great results often have small beginnings. For instance; each head of clover contains about 60 distinct flower tubes, each of which must, therefore, have a portion of sugar not exceeding the one-hundredth part of a grain. The proboscis of the bee must consequently be inserted into 500 clover tubes before one grain of sugar can be obtained. There are 7,000 grains in a pound, so that for every pound of sugar procured in this way, 3,500,000 flower tubes must be emptied. Honey, however, contains three-fourths of its weight of dry sugar, so that every pound of honey is equivalent to more

than 2,500,000 clover tubes sucked by bees. Yet how few people realize, or even have one thought of the amount of labor performed by the industrious honey-bee, in storing a hundred pounds of surplus honey. Nor do they think how rapidly they increase, for it is known that the queen has deposited as many as three to four thousand eggs in 24 hours; and in 21 days they all emerge from their cells perfect bees, there being about 35,000 to 40,000 workers in a good colony. It would only take a few days to rear a full colony if they did not work themselves to death; but the entire colony becomes new, every two to three months during the working season, owing to the amount of honey obtained and distance traveled in gathering it. Some people may think this a wild assertion, yet after 14 years' experience, I know what I speak; and to any one that does not believe it, I would say, try it yourself, as I have. By getting an Italian queen, and introducing her into a black colony, in three months they will not find a single black bee in the hive if the queen is a pure Italian; and it is a conceded fact that the Italians are the best, all things considered, for general use, although we have in the United States six different strains of bees—the common black, Italian, Holy Land, Syrians, Albinos and German—all having their friends, although the Holy Land and Syrians are very cross, while the Albinos are the most quiet in handling, and also slower in honey gathering, often not storing enough for their own use; while it is claimed that one cross of either two of these kinds improves them, with the possible exception of Italians, that are susceptible of weeding out a little in order to secure good honey gatherers.

I think for the specialist the Langstroth hives are the best, because they are capable of tiering up, by putting one above the other in time of a large honey flow, and when the apiarist is taxed to his utmost to give the bees room to prevent swarming, and thereby secure the best results in surplus honey. They are also well adapted to the storing of comb and extracted honey; and being in general use, all of the supply dealers have hives, frames and sections, in the flat, ready to put together, singly or in any amount wanted; and specialists are adopting the same hive, in order that they can order, on short notice, surplus sections, and have them fit without trouble. I have used the original American hive, patented by H. A. King & Co., of New York city; the hive being 15¼ square by 21 inches high, outside measurement, with nine movable frames in them; the top part of the frame being 1½ inches wide, forming a complete floor or the top to the hive, when all of the frames are in, and each frame has a slot ¾ by 2 inches through them, for the bees to pass through into the surplus boxes above, and it is my opinion, that for farmers or those who want only a few colonies, that the American is the best hive they could use; but would advise any one who intends to invest in bees, to visit a

well-established apiary and look at the different hives in use, and there he could learn more in one day, in a practical way, than he would learn from books in a month. Our most practicable apiarists advocate the necessity of students spending one season in the employ of a specialist, thereby learning the trade, so to speak, at the end of which time they are competent to take charge of an apiary of 80 to 100 colonies, with reasonable certainty of making a success of it; and I can speak for all bee-keepers, and say that, as a class, they are always willing to give advice to beginners, or if visited, will show them the advantages of the different hives that they may have in use. It will repay any one for such a visit, to see the different kinds of bees, for almost all bee-keepers have two or more strains, and they are all looking for the coming bee, the *Apis-Americana*.

Farmington, Kansas.

For the American Bee Journal.

Queen Rearing, Raspberry Honey, etc

P. P. N. E. PELISSIER.

I was surprised, on reading an article by W. C. Jennison, on page 119. He must use hard lumber to make his frames. Let him use soft pine and he will find that by pulling a little on the fine wire, or passing a piece of iron or hard wood over it, it will be imbedded sufficiently deep, so as not to interfere with the scraping of wax or propolis.

As for queen-cells, if he lets his bees swarm naturally, he does not need to cut queen-cells over wires, and thereby spoil his well-built worker-combs; he has simply to destroy those that he does not wish to hatch. If he wants to rear queens, the best way is to have frames without wires, fasten one or two bars (according to depth of frame) inside of the frame, parallel with the top and bottom bars; fasten a strip of foundation to each of these bars, and set one or two of these frames in the centre of the hive containing the best queen. In less than 24 hours, the comb foundation will be drawn out and every cell will contain an egg. Every bee-keeper knows how to have the queen-cells started, and he will have no difficulty in cutting them out large enough so that they can be simply fastened on another frame with a common pin, which will save the mutilating of combs.

The statement that Mr. Jennison clipped from the *American Cultivator* is wrong, so far as red raspberries are concerned. The flowers of red raspberries yield whiter, nicer and better-flavored honey, and in larger quantities than even the much-praised white clover.

The bees are good judges of honey; they will invariably gather from the bloom that yields the richest nectar, even if the secretion is not so great as in other bloom. Here, the white clover is of spontaneous growth; it may be seen everywhere; if a fire

runs into the forest, fire-weed and white clover will generally grow the same summer; fire-weed makes excellent fall pasturage for bees. It yields honey from Aug. 15 to Oct. 1.

I have hundreds of acres of white clover and red raspberries within reach of my bees, who invariably desert the white clover the moment raspberry bushes begin to bloom.

Bees are in splendid condition, wintering finely; mine were put in the cellar on Nov. 10, and look as if they could bear confinement three or four months longer; this, I attribute, to the thick, wholesome honey they have in the hives; honey gathered from raspberry and goldenrod. We are having the coldest and driest winter in the memory of the inhabitants.

Every one seems to have set his mind upon a standard frame. Why not adopt a frame 10 inches deep by 15 inches long, inside? Such a frame will contain 150 square inches, which is about the average size of frames in use. The Langstroth is too shallow to winter successfully in the North, and almost all other frames are too deep for the production of comb honey with success; besides, if we run for extracted honey, by using a second story, we have a hive of just the right height; whereas, if deeper frames are used, I would not like to use a second story, in a locality exposed to high winds.

Pelissier, Quebec, March 10, 1883.

For the American Bee Journal.

Section Racks, Crates and Separators.

W. H. B.

The leading questions, just now, are, What sized sections, and What kind of a rack or crate shall we use, to hold the sections in place on the hive, for comb honey? After experimenting considerably with different kinds of crates, I have settled on this as the rack. It is very simple; if made properly will adjust itself to the top of the hive, although it may not be level; it is just the thing for tiering up, whether used with separators or not. It suits me, and all that I have shown it to, and who have used it, think it about right.

For sections, 5 or 6 inches deep, slit out the stuff $1\frac{1}{2}$ or 2 inches wide (turn up edgewise, to nail together); for small sections not more than one inch wide. (I prefer to use sections running parallel with the frames, for several reasons). I cut two pieces $\frac{1}{4}$ inch longer than the length of the sections, in a row, from front to back of hive; these are the side pieces for the rack. Next cut the end pieces $\frac{1}{2}$ inch longer than the width of the section, from side to side of the hive, adding to them the thickness of the side pieces. Nail them on the ends of side pieces with one nail in each corner. This will let it adjust itself to the top of the hive. Cut some sticks, as long as the width of the hive, one inch wide, and as thick as the space between the top bar and the top of the hive; place these sticks crosswise of the hive, so that they will

come under the ends of the sections, when they are placed on; (these sticks will kill less bees than putting on a whole crate, filled with sections, at once, and I think it is more easily cleaned). Lay on the frame and fill it with sections and separators, if you use them, key up with a stick, which is as long as the length of the rows of sections, 1 inch wide and $\frac{1}{2}$ inch thick, having one edge chamfered off. For tiering up, place a block on each side of the top of the lower section rack, just long enough to hold the upper rack at the proper height. The bees will work in sections without separators sooner than with them (especially if the sections are small), but I find objections. One year, I fastened the sections together (without separators) before placing them on the hive; took them off and sold them, just as they came from the hive, and being fastened together, I could not assort them. I had something over 7,000 lbs. in this condition, and I lost 3 cents per pound on the lot, by not having it properly assorted, and my customers would have been better pleased. If, in a crate, there is some dark honey on the outside, it is a hard matter to make a customer believe it is white clover in the middle. I find, when separators are not used, with large sections, and honey is not coming in rapidly, the bees are sure to fill one side at a time of the combs, near the outside of the section crate; this causes the combs to curl into the next section; this makes trouble, and often the outside section will not be filled on the outside. With separators we have none of this trouble. Small sections will be filled nicer without separators than larger ones, and sometimes so that they can be glassed.

Oran, N. Y., March 7, 1883.

For the American Bee Journal.

The Best Hive for all Purposes.

DR. J. S. MCALLISTER.

My experience differs considerably (from what would seem to be that of Mr. Heddon's) in regard the Langstroth frame, and my experience in bee-keeping dates back nearly 40 years, when we kept from 30 to 100 colonies in the old-fashioned way. I have traveled some, and am acquainted with many very successful bee-keepers who, together with myself, do not consider it safe to keep a valuable colony of bees in the Langstroth hive (the year round). As far as surplus honey is concerned, either comb or extracted, I believe that there can be as much secured with side storing as top storing, with the proper sized frame and hive to hold them, and I think of all the sizes in use, the "American" comes the nearest to the most practical size.

With a plain hive, about 2 ft. long, a bee-keeper can have 8 frames for a brood nest, and room at each side for 18 one-pound sections, making 38 at a time, by placing them in edgeway to the brood frames, and leaving room on the top for as many more as he may wish. I like but very little upward

ventilation. The past winter I wintered 24 out of 25, the brood nest being sealed and packed nearly as tight as a drum, except that the entrance was open about 2 inches; the colony that died was ventilated the most. I use tight top-bars and winter on the summer stands. On page 601, of September number for 1882, headed an Amateur's Success, is a partial report for what I done with 3 colonies. The full increase was 27, and with the honey to take out of the hives this spring, will make the surplus honey the product of the 3 colonies and increase, nearly 500 pounds. I, like many others, have the pure unadulterated Italians, and I am starting an apiary at a point where there are no other bees kept for more than 20 miles, in any direction, for the purpose of keeping them pure.

Columbus, Neb., April 20, 1883.

Practical Farmer.

Making Ready for the Harvest.

W. G. PHELPS, M. D.

Nothing goes so far towards assuring success in bee-keeping as a state of preparation for the forth coming honey season. This preparation consists not simply in having surplus hives ready for expected swarms. To be prepared in every sense of the word, means, 1, well-populated hives; 2, accessible surplus department; 3, the use in boxes of starters or comb foundation; 4, right management at the right time.

Taking up these essentials, in the order named, let me explain. A well populated hive means a hive well crowded with bees at the opening of white clover bloom. This can be accomplished best by the stimulative method, and by feeding up. You may ask, "does it pay?" Yes, tenfold; particularly if your bees are short of natural stores, and are gathering none from without. Not that the bees convert the sugar fed them into honey, but rather into bee muscle, which, taking wing untiringly, gather nature's sweets, to store it, in more than compound ratio, for the owner. A normal colony of bees contains not less than 20,000 of these industrious insects. The younger portion of these assume the duties of nurses and wax-workers, while the other workers become the veteran honey gatherers. A less number of bees than above stated will store up for their owners much less honey, in proportion, than if up to or in excess of that. What I mean is thus illustrated: Two colonies, each consisting of 12,000 bees, would, as ordinarily kept, store no honey in the caps. The same bees combined in one colony, would yield, even by the simplest management, from 50 to 100 pounds. The reason is this, about so many bees are necessary to keep up the required heat of the hive and do the "chores," or household work, so as to speak. They will not enter the surplus boxes, unless conditions as regard heat, wax-working, etc., are all right. They are less able to defend their house against

robber bees, and many stay home for this purpose who would otherwise become honey gatherers.

2. Accessible surplus department.—Let our bees be ever so strong, if the depository for the surplus comb honey be not accessible, the bees will be loth to enter it. To work and transform the wax (a secretion of their bodies) into the wondrously-formed honey comb, requires a heat of at least 85 degrees.

3. Use of "starters" or comb foundation.—"Starters" are simply pieces of nice natural comb fastened with melted wax to the top of the box. In the absence of combs, comb foundation may be fastened to the top, in the same manner. The use of it can be relied upon to increase the yield of honey from at least 25 to 50 per cent. It encourages bees to commence work in the boxes, and saves them a vast amount of work in comb building.

4. Right management at the right time.—Many who keep bees make a great mistake in putting on boxes long before it is expedient to do so. Wait until the clover bloom is just ready to open, and then beware of putting on too many at once. Meanwhile keep all openings in the honey board well closed and the cap filled with dry leaves, chaff or cut straw, to prevent loss of heat from the breeding department.

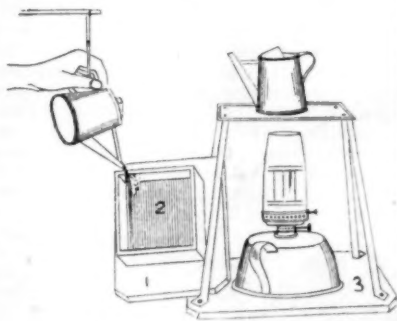
Galena, Md.

For the American Bee Journal.

Putting Foundation in Sections.

M. C. SMITH.

The accompanying engraving shows a machine for putting in full sheets of foundation in section boxes, which I made in March, 1881. I used it last



season to put in over 3,000 full sheets, with entire success. The table which holds the pot, is made of tin, cut 7 inches square; the edge is turned over and pressed down to give strength. The legs are cut out of tin, $1\frac{1}{2}$ inches wide; the edges turned over and pressed down, and long enough to raise the table $\frac{1}{4}$ inch above the lamp, to prevent smoking. Any lamp will do to melt the wax. The pots are gill cups, with oil can spouts attached, as shown in the cut. A common oil can, with handle, will do as well as the pots. The block, to the left, is to hold the foundation in the centre of the section, while being fastened, and

is made of $\frac{1}{2}$ inch board, 8 inches long, by 6 inches wide. No. 2, cut to fit inside of the section, and of the right thickness to hold the foundation in the centre. Fasten No. 2 in the centre of No. 1. Cut the foundation to fit without warping; place it in the section on No. 2; hold the block in the left hand, in such a manner as to allow the drop of wax to run down along the section and the edge of the foundation. From 1 to 3 drops will fasten it on both sides and top. Leave the foundation $\frac{1}{8}$ of an inch from the bottom of the section. Go to your tin-smith with the above description; he will make the tin work, lamp and all, for less than 75 cents; you can make the wood work yourselves.

This is the way I put foundation in brood frames by a Press. When the wax is ready, dip the board in the wax once; now you have two thin sheets. Lay one on the dies; on this put the wired frame; now lay on the other sheet, close the die book, and press the two sheets in one. By this plan you press the wire into the centre of the foundation. By this method the wire will not cut the foundation.

Last season I prepared between 300 and 400 frames, as described, and the bees built every one out into as beautiful combs as I ever saw. You can have a bushel of bees on these frames with success, every time.

Starkville, N. Y.

For the American Bee Journal.

Saunders Co., Nebraska, Convention.

The Saunders County, Nebraska, Bee-Keepers' Association, met April 28, 1883. The fact that a large amount of honey was being imported into this State was stated as an argument for a greater effort toward home production. To this was coupled the statement that 200 colonies to the square mile could not gather all the honey.

A report of members on wintering showed 252 colonies put into winter quarters. Out of that number 48 colonies perished. Many apiaries were not represented.

There has been a heavy loss of bees during the winter in this county—some largely engaged in the pursuit losing from half to two-thirds of their colonies.

C. C. TURNEY, Pres.

J. J. BURCH, Sec.

Convention for Northern Iowa.

There seems to be a number of beekeepers in the northern counties of Iowa. Why could not a meeting be held at some central point on the C. M. & St. P. R'y.? How many vote aye?

J. G. BENNETT.

Emmetsburg, Iowa, April 27, 1883.

Special Notice.—We will, hereafter, supply the Weekly BEE JOURNAL for 1883 and Cook's Manual in cloth for \$2.75, or the Monthly and Manual in cloth for \$1.75. As this offer will soon be withdrawn, those who desire it should send for the book at once.

What and How.

ANSWERS BY

James Heddon, Dowagiac, Mich.

When to Pack Bees for Winter.

Will Mr. James Heddon please answer the following queries in the BEE JOURNAL: What is the best time for packing or preparing bees for winter? What is your opinion in regard to packing them in the forepart of December, in such a winter as last winter has been? I would like the opinions of as many leading bee-keepers as possible on those queries.

Bristolville, O.

J. S. BARR.

ANSWER.—I have never yet been able to prove satisfactorily to myself, that very early packing was a benefit. By all means, I should aim to pack my bees at such a date that they would have a good chance to fly several times, and the first, immediately after the packing, and get thoroughly acquainted with their new quarters. I have maintained for years that I do not get any advantage from late breeding, and I do not want any undue early breeding either.

Wired Frames.

Please answer the following questions in the BEE JOURNAL:

1. In wired frames what size of top bar do you use, and which is the best way to punch holes in them?

2. How many wires for a Langstroth frame, and how near to the end bars should the first wire be?

3. How near should foundation fill the frames?

4. Is it not a difficult job, even with Given's wiring frame or machine, to get the wire just right, so that the end bars just so go in?

5. Should the wire be stretched tight, or must some allowance be made for it to give, when the die book is closed, so that it will not break?

H. W. FUNK.

Bloomington, Ill.

ANSWERS.—1. I use a top bar $\frac{3}{8} \times \frac{3}{8}$, and bore them on a boring machine that bores all the holes, in about ten bars per minute.

2. I use only eight wires per frame, and I use them all vertically. The end ones should not be further than $\frac{1}{2}$ inch from the end bar.

3. I maintain, against Mr. Root and others, that it is better and safer against all bulging, that there be a space of $\frac{1}{8}$ inch between the foundation and each end bar, and $\frac{1}{4}$ to $\frac{3}{8}$ at the bottom. Heat expands the wax sheets.

4. I use the Given press for all wiring, and with the lye process, I always make up all my frames com-

plete, and wire them before I put in the foundation. I now have no trouble. Two of my students are, this moment, in an adjoining room filling wired frames (a steady jog) at about three or four to the minute, and the perfection of the work, makes it fun for all who witness it. I wish every reader could see this work.

5. No; the wire should be woven quite loosely, as the action of the dies will take up the slack when the pressure is brought to bear upon it. These answers are applied to wiring with No. 36 wire for machine pressing, and not No. 30 and hand pressing.

Transferring Bees.

1. Regarding your new method of transferring bees, where do you place the old and new hives, after the first drive?

2. If I unite the second drive with the first, will they cast a swarm before the honey season begins?

Devizes, Ont. JOHN S. RIDDELL.

ANSWER.—1. After the first drive we place the new hive directly on the old stand, and the old hive a few rods away to a new stand, unless we mean to put the second drive into the same new hive, thus avoiding any increase, when we place the old hive only a few feet away, and then off to one side, and partially behind the new hive.

2. No; you will not do this driving till the honey season is just opening.

Freaks of a Queen and Bees.

I am still desirous of "more light." The queen that I spoke of as "coming to," on April 2, is "performing" curiously.

1. On my first examination, after she was introduced to the little colony in the nucleus hive, I found that she had commenced to deposit her eggs "all in order," i.e. only one in a cell. Upon a further examination, to-day, I found that she was distributing them quite freely through the few combs, that are in the hive, but instead of one egg, there are from one to five. How can this be explained?

2. Here is another wonderment to a beginner like me. In looking over my colonies, to-day, I found one that had been queenless, but they have provided themselves with a young queen, that probably is not more than 48 hours old, and in the whole hive there is not a singly egg or larva to be found. What can be done with this young queen? There are no drones in my apiary, how am I going to save this colony and queen?

H. B. HAMMON.

Bristolville, O., April 25, 1883.

ANSWERS.—1. This can be accounted for in the following ways: 1. Drone layers (unfertile queens) are apt to lay a plurality of eggs in a cell.

2. Some otherwise good fertile queens sometimes have this fault. 3. A very prolific queen will often do so when cramped to a small comb surface. I presume this is the trouble in your case.

2. You have a plain case of superseding of a "played out queen." The bees reared this young queen from the eggs of the old one, which old one departed about the time the bees began the new queen. When the new one hatched, of course there was no brood young enough to be in the egg or larval state. You are about in my latitude, and should have drones flying in a few days. As queens often become fertilized 10 to 15 days (and sometimes, we are told, 20 days) after birth, there is hope for this queen, and my way would be to let the matter alone ten days or two weeks, and then examine the combs for eggs.

SELECTIONS FROM OUR LETTER BOX

A Cold Wave.

We have had cold now for nearly a week; the mercury standing at 18° above zero, two mornings. Yesterday we had 2 inches of snow with a searching wind. As elm and soft maples were in bloom a week ago, I set the bees out of the cellar, only to get them caught by this cold wave.

G. M. DOOLITTLE.

Borodino, N. Y., April 26, 1883.

Queen Rearing—Killing Tree Worms.

The time is near at hand, with us, when apple trees will be in blossom, and that is about the time when many of us begin to sort our nuclei, for queen rearing, that we may have queens ready, so that our strong colonies may be divided and be in readiness for the honey harvest. Other hives may have queens that are old, or for some other cause need superseding. I have been in the bee business for 27 years, and have spent much time and money in rearing queen bees. All who have but a few colonies of bees, and especially for those who have more and wish to improve them, should procure the new book of Mr. Alley, which gives the results of 22 years experience in queen rearing. This tells all about how to get good, hardy, prolific queens whose progeny will be hardy, healthy and good honey gatherers. It talks good sound sense, and is what every bee-keeper should have before him. When I sat down to write, I thought I would tell something about what a hard time we used to have, killing the worms on our apple trees, but, as I have run away from that subject, I will only show how we destroy them now, as it is so much nicer than the old way. If we

do not kill the worms, they will kill the trees. We arm ourselves in the following manner; first, we want a pole long enough to reach the highest nest; on the top end tie a rag about as large as a dish-cloth, or smaller; next we want some lye in an iron kettle, or something convenient to carry it in; the lye need not be very strong, only strong enough to crack the skins of the worms; dip the rag end of the pole into the lye, and give them one sop, when they are in the nest. If you have never done this, you will be surprised to see the amount of worms you will kill in a few hours. I prepare the lye in the following way: Fill a kettle one-half full of wood ashes, and fill it up with water; set it on the stove and bring it to a boil; this will be strong enough.

W. H. BALCH.

Oran, N. Y., April 23, 1883.

Bees Strong and Ready for Harvest.

My bees are all right. I had 114 colonies in the cellar, and have lost six; some weak colonies I have doubled up, reducing them to 100 good and strong. I am now ready for the honey harvest.

J. STEWART.

Rock City, Ill., April 28, 1883.

Prospect for Honey Never Better.

The prospects for a good honey harvest in this locality was never better. There is an abundance of white clover, catnip, etc., which will be in bloom by the middle of this month. My bees are all in good condition, and are very busy on the fruit bloom, which is now at its best. I had two fine swarms,—one yesterday and one to-day—the earliest I have ever had. I am now busy forming nuclei and dividing up, so as to be ready to take in the rich harvest when it comes.

ELVIN S. ARMSTRONG.

Jerseyville, Ill., May 2, 1883.

Burned Up.

My house, with all its contents, has been destroyed by fire. My bees got a scorching, and one hive was burned up. They had wintered well. I lost one for want of food, and one was burned up, leaving me 13 colonies now.

WM. MOWBRAY.

Sarnia, Ont., April 28, 1883.

Preventing Stings, etc.

Mr. J. H. Stephens, Riverton, Iowa, wishes to know an antidote besides whisky, to prevent the dreaded "business end" of his bees, when walking in the yard. He says that the bees have a natural dislike to him, which can be avoided by taking a small dose of whisky, peppermint or anything that will change the smell of his breath, which the bees seem to dislike, and which exasperates them to stinging. Wash the hands and face with the same ingredient, sweetened with a little sugar; this will impregnate the skin with odoriferous perspiration, which the bees seems to admire, instead of the objectionable perfume the body has during manipulation. In the spring of 1882 I bought one 3-frame nucleus to begin with. I

increased them to 6, in good condition for winter. On the first warm day in April all were doing well, with the exception of two which were weak in numbers. One was robbed, through my own carelessness, so that I have five to begin the season with. I extracted, in the first week of September, 80 lbs. of goldenrod honey. I would like to ask G. B. Jones, Brantford, Ont., if the three entrances spoken of, on page 210, are more serviceable to winter, than one on a tight bottom-board? Jos. M. WISMER.
Jordan Sta., Ont., April 28, 1883.

Bee-Keeping in Ireland.

You can scarcely imagine with what interest I have re-read the able articles, during the past year, in the AMERICAN BEE JOURNAL. Do not let me miss any number of this volume. Long may it be cater for us all. We have had a very long, wet cold winter, and it has tried our plans of wintering. I hope we may all have a good honey season. WM. DITTY.
Newtownards, Ireland, April 19, 1883.

Bees Breeding Up.

My bees came through in first-class order. They are breeding up to very strong colonies at the present date. All that were put up, either in cellar or in chaff receptacles on the summer stands, with chaff box cushion cover, lived and are in good trim. Those left upon the summer stands unprotected, and with tight honey-board, took Heddon's "pollen disease," and about 10 per cent. died.

E. L. BRIGGS.

Wilton Junction, Iowa, April 30.

Still Cold in Northern Ohio.

There is a cold north wind to-day, with a clear sky; the ground was frozen this morning. The past week has been cold, with two or three mornings that the thermometer ranged from 27° to 30°. Bees have flown but little, and the maples, elms and willows that were furnishing them such fine forage have, of course, been blighted.

P. F. TWITCHELL.

Andover, O., April 29, 1883.

Problem of Wintering Bees Solved.

The past winter has been the coldest ever known here; notwithstanding which, bees have wintered uncommonly well. I put 32 colonies in the cellar on the first of November, and took them out April 3. All came out in good order, after the five months confinement. They did not have a flight for 15 days, before being put into the cellar, last fall. The cellar, that my bees wintered in, during the past winter, was very cold; potatoes froze solid; and for weeks at a time the mercury stood at 12° below freezing, and I expected to lose heavily; but all came out right. I have been so uniformly successful with my method of wintering bees for the past 13 years, that I think that, to my satisfaction, the problem is solved. I have never lost but one colony, in the cellar, that did not starve to death, and that one was queenless, and con-

tained only a few old bees, when it was put in. The result of my experience, in wintering bees, entirely fails to corroborate many of the scientific theories advanced by writers on that subject, and I am content to follow the course that has uniformly proved successful with me, regardless of what science may prove, if not sustained by experience. In a future article I will briefly give my method of preparing for wintering bees.

O. E. COOLEY.

Ridgeway, Iowa, April 26, 1883.

Un-poetic Bee-Culture.

We are having but little of the poetry of bee-keeping in this state. A poor honey season, followed by a winter, quite as disastrous to the bees here as was the winter of 1880-81. Many bee-keepers have lost all. My own loss is about 20 per cent.

W. J. DAVIS.

Youngsville, Pa., May 1, 1882.

Honey and Beeswax Market.

OFFICE OF AMERICAN BEE JOURNAL.
Monday, 10 a. m., May 7, 1882.

The following are the latest quotations for honey and beeswax received up to this hour:

Quotations of Cash Buyers.

CHICAGO.

HONEY.—The nominal price of extracted is 7c. for dark and 9c. for light—here. The supply is abundant and sales are slow.

BEESWAX.—None in the market.

AL. H. NEWMAN, 923 W. Madison St.

CINCINNATI.

HONEY.—The demand for extracted honey is very good, and arrivals are slow. We pay 7@10c. on arrival. We sold, since last October, more than 800 barrels, and our stock is exhausted, while our customers are relying on us for supplies. Hope our friends will supply us. No demand for comb honey, and prices nominal.

BEESWAX.—Arrivals of beeswax are good, and prices range from 30@35c. for a good article.

CHAS. F. MUTH.

Quotations of Commission Merchants.

CHICAGO.

HONEY.—The demand is light and it is not now probable that all of the comb honey can be sold before a new crop comes. Prices are very irregular and generally low: 15@16c. for white, and dark unsalable. Extracted, very little trade is being done in it. 7@9c. is about the market.

BEESWAX.—35@36c.

R. A. BURNETT, 161 South Water St.

SAN FRANCISCO.

HONEY.—Buyers are readily obtained for choice comb or extracted at full figures, but off qualities meet with slow sale.

White comb, 14@17c.; dark to good, 11@13c.; extracted, choice to extra white, 8½@9½c.; dark and candied, 5@7½c.

BEESWAX.—We quote 30@33c.

STEARNS & SMITH, 423 Front Street.

ST. LOUIS.

HONEY.—Dull; light jobbing sales only. Comb at 10@14c.—Strained and extracted at 7@7½c. Couple lots of poor Comb sold at 10c.

BEESWAX.—Sold lightly at 35@36c.

W. T. ANDERSON & CO., 117 N. Main Street.

CLEVELAND.

HONEY.—Is a little lower, and at the lower price it has moved off a little better of late. 1-lb. sections of best white sold at 18½@19c.; second grades, 1-lb., 17c.; 2-lb. sections a little slow at 17@18c. Extracted very dull at 9@11c.

BEESWAX.—None in market.

A. C. KENDEL, 115 Ontario Street.

BOSTON.

HONEY.—Our market is fairly active. We quote: ¼ lb. sections at 30c.; 1 lb. sections, 22@25c.; 2 lb. sections, 20@22c. Extracted, 10c. per lb. Good lots of extracted are wanted in kegs or barrels.

BEESWAX.—Our supply is gone; we have none to quote.

CROCKER & BLAKE, 57 Chatham Street.

Special Notices.

Examine the Date following your name on the wrapper label of this paper; it indicates the end of the month to which you have paid your subscription on the BEE JOURNAL.

For safety, when sending money to this office get either a post office or express money order, a bank draft on New York or Chicago, or register the letter. Postage stamps of any kind may be sent for amounts less than one dollar. Local checks are subject to a discount of 25 cents at Chicago banks. American Express money orders for \$5, or less, can be obtained for 5 cents.

We wish to impress upon every one the necessity of being very specific, and carefully to state what they desire for the money sent. Also, if they live near one post office, and get their mail at another, be sure to give us the address we already have on our books.

Preparation of Honey for the Market, including the production and care of both comb and extracted honey, instructions on the exhibition of bees and honey at Fairs, etc. This is a new 10 cent pamphlet, of 32 pages.

Honey as Food and Medicine.

A new edition, revised and enlarged, the new pages being devoted to new Recipes for Honey Medicines, all kinds of cooking in which honey is used, and healthful and pleasant beverages.

We have put the price of them low to encourage bee-keepers to scatter them far and wide. Single copy 6 cents, postpaid; per dozen, 50 cents; per hundred, \$4.00. On orders of 100 or more, we print, if desired, on the cover-page, "Presented by," etc., (giving the name and address of the bee-keeper who scatters them). This alone will pay him for all his trouble and expense—enabling him to dispose of his honey at home, at a good profit.

The Apiary Register.

All who intend to be systematic in their work in the apiary, should get a copy and commence to use it.

For 50 colonies (120 pages).....\$1 00
" 100 colonies (220 pages)..... 1 50
" 200 colonies (420 pages)..... 2 00

The larger ones can be used for a few colonies, give room for an increase of numbers, and still keep the record all together in one book, and are therefore the most desirable ones.

Our Premiums for Clubs.

Any one sending us a club of two subscribers for 1 year, for the Weekly, with \$4, will be entitled to a copy of Bees and Honey, in cloth, postpaid.

For three subscribers, with \$6, we will send Cook's Manual, in paper, Emerson's Binder for the Weekly, or Apiary Register for 50 colonies.

For four subscribers, with \$8, we will send Cook's Manual in cloth, or Apiary Register for 100 colonies.

For five subscribers, with \$10, we will send the Apiary Register for 200 colonies, Quinby's New Bee-Keeping, Root's A B C of Bee Culture, or an extra copy of the Weekly BEE JOURNAL for one year.

To get any of the above premiums for the Monthly BEE JOURNAL send double the number of subscribers, and the same amount of money.

Our stock of back numbers of this volume are now getting very low. Please look over your numbers, and if any are lacking, send us a postal card, giving the date of those you want, and we will send them, if not all gone. We give this notice, because, last year, several left it until the end of the year, and then requested us to send the missing numbers. Then it was too late, the numbers being all gone. Look them over now, and you may get them completed.

Foul Brood Pamphlet.—Wishing to be relieved of sending out my pamphlet on Foul Brood, I have made arrangements with Mr. T. G. Newman to supply them to the bee-keeping fraternity desiring them.

A. R. KOHNKE.

Youngstown, O., April 25, 1883.

Bee Pasturage a Necessity.—We have just issued a new pamphlet giving our views on this important subject, with suggestions what to plant, and when and how. It is illustrated with 26 engravings, and will be sent postpaid to any address for 10 cents.

Mr. Alley's new book on Queen Rearing will hereafter cost \$1.25

We have received his Circular and Price List for 1883, which contains 32 pages, and make a nice appearance.

Emerson Binders—made especially for the BEE JOURNAL, are lettered in gold on the back, and make a very convenient way of preserving the BEE JOURNAL as fast as received. They will be sent, post-paid, for 75 cents, for the Weekly; or for the Monthly, 50 cents. They cannot be sent by mail to Canada.

Convention Notices.

The Iowa Central Bee-Keepers' Association will hold their semi-annual meeting at Winterset, Iowa, on Friday, May 11, 1883. All interested in anything pertaining to bee-culture are invited to attend, and bring anything that will be of interest to the bee fraternity.

J. E. PRYOR, Sec.

A. J. ADKISON, Pres.

The Southwestern Iowa Bee-Keepers' Association will hold its annual meeting at the apiary of L. E. Mercer, Lenox, Taylor county, Iowa, May 26, 1883. Meeting called at 10 o'clock sharp. Forenoon: Election of officers. Afternoon: Work in the apiary, when any question, with regard to handling bees, will be practically explained. Accommodations will be provided for visitors from a distance.

W. J. OLIVER, Sec.

There will be a meeting of the Northwestern Illinois and Southwestern Wisconsin Bee-Keepers' Association on Tuesday, May 15, 1883, at Mr. E. Whitlesey's, two miles south of Pecatonica, Winnebago County, Ill.

J. STEWART, Sec.

Rock City, Stephenson County, Ill.

We have a few copies of our pamphlet entitled "Bee Culture" left, and have reduced the price from 40 to 25 cents each, or \$2 per dozen.

Cyprians Conquered.

All summer long it has been "which and tother" with me and the Cyprian colony of bees I have—but at last I am "boss." Bingham's "Conqueror Smoker" did it. If you want lots of smoke just at the right time, get a Conqueror Smoker of Bingham.

G. M. DOOLITTLE.

Borodino, N. Y., Aug. 15, 1883.

18A4t 5B1t

We carefully mail the BEE JOURNAL to every subscriber, but should any be lost in the mails we will cheerfully send another, if notified before all the edition is exhausted.

WANTED, by one who has had quite a considerable experience in bee-culture, to engage with a practical apiarist for the present season. No correspondence solicited but by those who are masters of the business. Compensation required according to services rendered. My age is 64—health good. Can go anywhere on short notice. Address, L. N. TONGUE, Box 43, Elroy, Wis.

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A. D. BENHAM,

Olivet, Mich.

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